

MONTHLY STATUS REPORT

JANUARY 2003

UPPER MISSISSIPPI RIVER – ILLINOIS WATERWAY SYSTEM NAVIGATION STUDY



PURPOSE: These monthly status reports are intended to provide team members, partners, stakeholders, and other interested parties with a brief overview of significant events and activities occurring within the major components of the UMR-IWW System Navigation Feasibility Study. We welcome your comments and input on the status reports to ensure they provide timely and useful information. If you identify monthly events that we have overlooked, please let us know and we will correct it on the website. POCs: Denny Lundberg ph.: (309) 794-5632. or email address Denny.A.Lundberg@usace.army.mil or Scott Whitney ph.: (309) 794-5386. or email address Scott.D.Whitney@usace.army.mil

PROJECT MANAGEMENT (Lundberg and Whitney)

- **Memorandums For Record (MFR):** MFR's documenting key study decision points will be made available to the stakeholders as the study progresses. The first two MFR's involving the scenario probability and benefit model sensitivity issues are being distributed concurrently with this Status Report. They can also be found on the study website under the "What's New" section. Additional MFR's are expected in the coming months on other important study decision points, these will be similarly distributed.
- **Regional Contact Database:** A "Contacts" section has been added to the list of main menu items on the Navigation Study website. This new section is still under construction and awaiting the completion of 3-5 more files (currently in the final review stages) that provide contact information from the various stakeholders and study team members. This section currently is linked directly to a PDF file containing a listing of Corps study team members and members of the three primary committees (NECC, ECC, and GLC). We hope to keep this contact information accurate, user friendly, and up-to-date, so your review and feedback would be most appreciated.

ENVIRONMENTAL (Barr)

Environmental Sustainability Component

- **Stakeholder Workshops** – Four DRAFT reports summarizing the results of the November 2002 Stakeholder Workshops were distributed to participants for review and comment. The review period ended January 30th and comments are now being addressed. In support of the Expert Panel efforts, results from the stakeholder workshops were also summarized and submitted to the panel for their January 22-23 meeting involving UMR-IWW environmental goals and objectives. As part of the Navigation Study documentation process, a DRAFT Environmental Report that integrates the results and comments from all four workshop reports will be distributed, in mid February, to the participants, NECC, ECC, and GLC members. This final integrated report contains a full accounting of the site-specific objectives in the form of atlas maps and tabulated system, reach and pool-wide objectives and management actions. The UMR-IWW environmental objective database has been updated based on submitted reviewer comments and will be finalized after further review of the integrated workshop report. This will include review of the site-specific objective atlas maps and supporting descriptive tables.
- **Expert Panel:** Panel members met for the first time January 22 and 23 2003 in St. Louis MO to review goals and objectives established during the Stakeholder Workshops conducted during the

previous November. In addition to reviewing goals and objectives, the panel developed a course of action that will allow them over the next three monthly meetings (February through April 2003) to assist in linking a suite of potential management actions with specific environmental objectives via application of a conceptual modeling approach. The panel constituency reflects a broad diversity of technical expertise and experience, which will allow a solid scientific basis for future environmental management and restoration efforts on the UMRS.

- ***Operation and Maintenance Related Alternatives*** – As part of the environmental sustainability component, we have initiated efforts designed to focus additional attention to actions that could offset some of the ongoing environmental effects of operating and maintaining the existing 9-foot navigation channel project. The following brief summations are provided for two of these activities, fish passage and water level management:

Fish Passage - An interagency Fish Passage Team was formed to plan for improving fish passage at the UMRS navigation dams. The fish passage study will provide information and recommendations for use in the Navigation Study feasibility report and EIS. Fish Passage Team members include:

- Luther Aadland	MN DNR	- Duane Atchley	Corps
- Butch Atwood	IL DNR	- John Nestler	Corps
- Ron Benjamin	WI DNR	- Dan Johnson	Corps
- Bernie Schonhoff	IA DNR	- Elliot Stefanik	Corps
- Ken Brummett	MO DOC	- Aaron Buesing	Corps
- Bob Clevenstine	USFWS	- Dan Wilcox	Corps
- Greg Conover	USFWS	- Mark Cornish	Corps
- Scott Yess	USFWS	- Brian Johnson	Corps
- Gary Wege	USFWS	- Steve Zigler	USGS

In January, the Fish Passage Team held a conference call. A report outline was discussed, and authors for the different report sections were assigned. Work is proceeding on compiling information about the distribution of fish and mussel species in the river system, alternatives for improving fish passage at the dams, exotic fishes and their potential for invasion of the river system, and a GIS effort to quantify the amount of additional aquatic habitat that would become accessible to fish if they could pass each dam in the system. The fish passage study report will be completed in June this year.

Water Level Management - Team members are working to complete summaries of past WLM initiatives and studies within each of the three districts, as well as major constraints to implementation of WLM actions. Summaries are due in early February. The summaries will be compiled and distributed to the entire WLM team as read-ahead for a March 4-5 team workshop. The workshop will consist of:

- A discussion of objectives for WLM in connection with the Navigation Study
- Definition of the types of WLM actions to be considered (including timing, duration, magnitude)
- A “screening” analysis to prioritize pools based on environmental objectives and identified constraints
- Development of measures to define benefits and costs of the WLM actions
- A discussion of how to proceed with the development of benefit and cost information required to support plan formulation in the Restructured Navigation Study

Environmental Impact Assessment Studies:

- Aquatic Plants*** – Researchers with USGS UMESC (Yin, et al.) completed their 2002 survey work on submersed aquatic vegetation (SAV) in the main channel borders of Pools 14 through 19. A data report about that survey will be provided to the NECC. The GIS data from the survey has been provided to The Cadmus Group Inc. and to the Corps ERDC Environmental Laboratory GIS Center. Dr. Elly Best of the Corps ERDC Environmental Laboratory, Beth Rycyczyn of Winona State University and Kevin Kenow of the USGS UMESC have completed their 2002 work to further calibrate and validate the POTAM and VALLA plant growth and reproduction models, using results of field and laboratory experiments on the effects of current velocity and epiphyton shading of leaf surfaces. Dr. Best revised the Fortran shell programs for POTAM and VALLA. Drs. Steve Bartell and Shyam Nair of The Cadmus Group Inc. are programming the VALLA and POTAM plant growth models into Visual Basic to enable running the models on standard personal computers and to enable modifying the input parameters such as navigation traffic rate. The effects of wave action and sediment resuspended by passing commercial tows and recreational boats on SAV in the UMR main channel borders will be simulated in a spatially-explicit way. A GIS of potential plant growth zones and impact zones in the UMR main channel borders will be used to assess the effects of navigation on SAV.
- Adult Fish Entrainment*** A specially designed trawl was used to sample fish entrained by towboat propellers. Sampling vessel was the 3,800 horsepower MV *Cooperative Venture* (operated by ADM/ArtCo) loaded with three empty barges. Ten-minute hauls were taken at typical operating speeds of 7.2-8.2 km/h in Pool 26, Upper Mississippi River and the lower 9 miles of the Illinois River. Sampling occurred in September 16-19, November 12-14, 2002 and January 14, 2003. A total of 2,916 individuals of 13 species were collected, but gizzard shad accounted for 94% of the catch. Total number collected and subsequent mean values do not include one trawling sample in the Illinois River at the Grafton Ferry crossing that collected 1,627 fish. This unusually high number of fish was not typical of other samples in the Illinois River. The mean (\pm SD) number of individuals collected per sample was 69.03 ± 125.8 , ranging from zero to 549 for the Illinois River and 8.73 ± 21.54 , ranging from zero to 160 for the Mississippi River, Pool 26. Catch declined at lower water temperatures (Table 1). Mortality values were calculated as the percent of individuals killed by a visible injury. Preliminary Results indicate total mortalities for the Illinois River and Pool 26 were 1.5% and 14.1% respectively, but this value included obvious net-induced injuries. A total of 3 fish (1 Skipjack Herring + 2 Gizzard Shad) were collected with visible signs of propeller-induced injuries.

Table 1. Numbers of fish collected per 10-minute trawl in the Mississippi River Pool 26 and Illinois River, September and November 2002 and January 2003.							
Month/Water Temperature	River	N	Mean	Std	Min	Max	Sum
September/24 °C	IL	8	174.25	172.38	2	549	1394
	MS	49	15.42	27.34	0	160	755
November/9 °C	IL	23	32.43	81.89	0	351	746
	MS	24	0.75	1.42	0	5	18
January/0.3 °C	IL*	-	-	-	-	-	-
	MS	16	0.18	0.75	0	3	3
All Samples	IL	31	69.03	125.82	0	549	2140
	MS	89	8.73	21.54	0	160	776

*Illinois River was not sampled during January due to ice formation.

- Lock 25 Fish Mortality Study** - Concern was expressed by the Fish and Wildlife Service that large numbers of fish could potentially be killed by towboats passing through the confined space of the locks on the Upper Mississippi River. A study to evaluate fish mortality during tow locking was begun by the St. Louis District during the summer of 2002 in Lock 25. After a towboat passes through the lock, dead or injured fish are collected from the surface and approximately 50% of the lock bottom is sampled with a trawl. To date, a combined total of 60 towboat passages have been monitored during the months of June, August, October, and December. During our winter sampling period, December 2nd through 6th, 18 lock passage events were monitored. A total of 103 fresh dead fish (102 gizzard shad and 1 freshwater drum) was collected. Two towboat passages were responsible for 66 percent (23 and 45 gizzard shad) of the December mortalities. Six passages (33% of the lockages) resulted in no mortality. The remaining 10 lockages resulted in mortality ranging from 1 to 8 fish per towboat. As part of this study, we are also conducting a monthly hydroacoustic study of the lock to determine the number of fish in the lock throughout the year. Our January hydroacoustic survey was not conducted because of our inability to put the boat in the water due to low water and ice. Later this winter, Dr. Steve Maynard from the Waterways Experiment Station, will calculate the amount of water in the lock that is actually passing through the propellers at various river stages. It appears that locking is certainly responsible for some fish mortality but the numbers, to date, have been small and appears to be limited mainly to gizzard shad and freshwater drum.
- Fish Towboat Avoidance Study** – The St. Louis District has received the data analysis results from the August 2002 sample. A draft report is being prepared. Data from 37 tow passage events were analyzed. In the nearly 9 hours of sample time during tow events, 8,958 fish were tracked throughout the entire channel. In 4 hours of “no-tow” data analysis, 6,460 fish were tracked. Preliminary results indicate that fish densities were 1 to 2 orders of magnitude higher in the near shore habitat than in the channel edge or main channel areas during “no-tow” periods. Densities at night were approximately twice the daytime densities. Densities during tow events were similar to no-tow periods in the near shore habitat. Fish movement related to the tows differs during day and night periods, and also by their location relative to the tow. Fish alongside the tows generally move away in the Z-axis, or horizontally, from the tows. Fish in the near shore habitat showed no unexpected movement during tow passage during day or night. Fish in the main channel during the day moved away from the tows in both the Z and Y-axis in the 1-minute period preceding tow passage. At night, fish in the main channel showed tow avoidance in the Y-axis; however, they did not avoid the tow by moving sideways in the channel. Data analysis has begun on the November sample. Winter sample work was suspended on January 15th due to ice in the channel. Plans are for that work to be completed in late February. Field observations suggest the fish densities during November and January will be much lower than in August.
- Field Data Collection For Backwater/Side Channel Sedimentation** - Processing and analysis of the field data will be completed by mid-February. Comparison of NAVSED to field data will be completed in March.

ENGINEERING (Hughey)

- Independent Technical Review** - The EWG is revisiting the responses to the July 2000 ITR of the Engineering Appendix to ensure responses are up to date and comprehensive. The results of the review will also help formulate the plan for the new ITR in the upcoming year.
- Economic modeling** - The EWG continues to provide input and support for economic modeling for the with-project conditions and review of interim results of the without-project conditions.

- **Environmental sustainability** - The EWG is participating in environmental sustainability efforts ranging from meetings to expert panel discussions. Expertise is offered in hydraulics, geomorphology, and environmental pool management.

ECONOMICS (Manguno)

- **Independent Technical Review (ITR) of Sparks Scenario Report** – Formal ITR process complete. Document will be distributed in February to ECC and NECC members.
- **TOW COST Model Development:** Model results for the without-project condition were received on Feb 5. Traffic Forecasts have been handed off to the environmental work group.
- **Economics Coordinating Committee (ECC) Meeting:** Primary topic of discussion will be ITR of Sparks scenario work. This will be convened along with the NECC meeting on February 24-25.
- **Transportation Rate Analysis Review:** This work, being conducted by TVA, is intended to provide up-to-date information concerning various bulk commodity transportation rates. TVA conducted this same analysis in the early 1990's. Notice to proceed on this work item was issued the first week of February.

PUBLIC INVOLVEMENT (Bluhm)

- **Newsletter:** The Newsletter is in the final stages of editorial review and is expected to be finalized and distributed in late February.

SIGNIFICANT EVENTS

- **EMP Receives Full Funding:** The president's fiscal year 2004 budget, released February 3, contained exciting news for the Upper Mississippi River System. The Environmental Management Program (EMP), a project to rehabilitate habitat, backwaters and side channels as well as collect and analyze trend data, has been funded to its authorized amount of \$33.3 million for 2004 – an increase of more than \$18 million over the current FY03 funding level. This is an example of what can be accomplished when Regional stakeholders collaborate for a common purpose. Representatives of the various state resource agencies and non-governmental organizations were instrumental in garnering support for this level of funding.
- **Ecosystem Restoration Colloquium** - On 23-24 Jan a colloquium was held at the University of Miami to discuss ecosystem restoration projects from around the country. The Restructured Navigation Study was one of five that were featured at the colloquium. Other efforts included the Cal-Fed Program, Everglades Restoration, Platte River Basin Project, and the Chesapeake Bay Restoration Program. The Navigation Study was represented by Dr. Jim Johnson, USACE HQ Chief of Planning, Dr. Ben Tuggle, Chief, Division of Fed. Program Activities, USFWS, Holly Stoerker, Executive Director, Upper Mississippi River Basin Ass'n; Denny Lundberg, USACE Nav Study Regional Project Mgr; and Rick Nelson, USFWS Field Supervisor. Case studies were prepared for each project and will be made available when published.
- **Mississippi River Citizen Commission Briefing** - On 14 January, Denny Lundberg attended the Upper Mississippi River Citizen Commission meeting held at Lock and Dam 7 in Le Crescent, Minnesota. Several Congressional staffers were present for the briefings. Participants heard briefings from Don Powell, USACE, concerning the Environmental Management Program; from Denny Lundberg, USACE, concerning the Navigation Feasibility Study; from Don Hultman, USFWS, concerning the National Upper Mississippi River Wildlife and Fish Refuge; and from Kent Pehler, Brennan Marine, concerning securing Upper Mississippi representation on the Mississippi River Commission.

- ***River Resources Coordination Team Conference Call*** – (January 15) Scott Whitney provided the RRCT members with an update and answered questions on various Nav Study efforts. Primary topics of discussion included study schedule, stakeholder workshop reports, expert panel, and alternative plan formulation/evaluation.
- ***NECC Conference Call*** (January 28) – Twenty-five individuals representing various state/federal resource agencies and several non-governmental organizations were in attendance. Discussions centered on the Environmental Objective workshops and reports; Expert Panel; and development of an Adaptive Management Measures (evaluative report card).

UPCOMING MEETINGS OR SIGNIFICANT EVENTS

- *ECC Meeting* (February 24-25) Holiday Inn, Davenport, IA
- *NECC Meeting* (February 24-25) Holiday Inn, Davenport, IA
- *GLC Meeting* (February 25) Davenport, IA
- *Expert Panel Meeting* (February 25-26) Davenport, IA
- *UMRBA Meeting* (February 26)
- *EMPCC Meeting* (February 26)
- *EMP Report to Congress Workshop* (February 27)